RESEARCH LETTER



# Development of Multiple Cherry Haemangiomas in a Patient with Androgenetic Alopecia after Topical Minoxidil Use

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*Dear Editor*,

A 35-year-old male, in robust health, revisited our hospital for a follow-up consultation concerning "progressive thinning of hair on the crown and forehead over 14 years". Initially presenting 14 years earlier with hair loss, he was diagnosed with Hamilton–Norwood IV androgenetic alopecia and commenced on oral finasteride (1 mg/day) combined with topical 5% minoxidil (1). Hair loss improved after 1 year, leading him to discontinue finasteride independently while continuing minoxidil for an additional year. He noted multiple red round papules on his scalp appearing in the second year of minoxidil use, which gradually enlarged but have increased in neither number nor size for the past 12 years post-discontinuation of minoxidil.

Physical examination 14 years ago revealed sparse hair across the crown and forehead, with a solitary, bright-red papule on the right side of the crown, approximately the size of a green bean (approximately 2.0 mm in diameter) (**Fig. 1**A). Current physical examination showed multiple isolated red papules scattered across the crown and forehead (area of application), varying in size from a soybean to a rice grain (numbers 1–5) approximately 3.8 mm, 3.6 mm, 0.7 mm, 0.9 mm, and 0.4 mm respectively in diameter). No rashes were observed in the occipital or temporal regions, nor were similar rashes evident elsewhere on the body (Fig. 1B, C). Dermoscopic examination revealed multiple clustered blood vessel networks, with distinct boundaries of red cavities (Fig. 1D). The histopathological presentation is characterized by reduced follicular structures and smaller dermal papillae. The haemangioma protrudes above the skin surface, presenting as endothelial-lined vascular cavities of varying sizes containing erythrocytes (Fig. 1E).

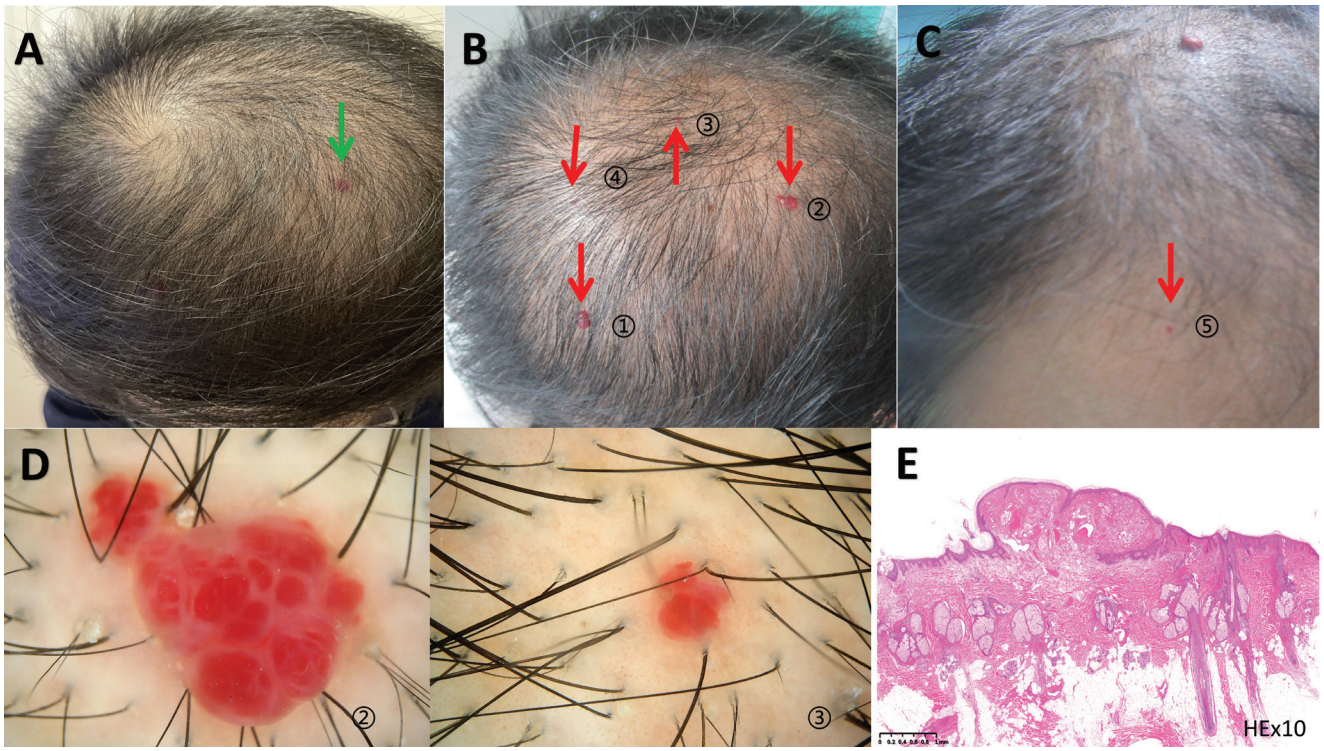


**Fig. 1. Skin with 1 cherry angioma (approximately 2.0 mm in diameter) prior to the application of topical minoxidil.** (A, green arrow) Scattered, multiple isolated bright-red papules on the crown and forehead (application area), varying from soybean to rice grain in size, 5 in total. (B ①②③④ and C ⑤ approximately 3.8 mm, 3.6 mm, 0.7 mm, 0.9 mm, and 0.4 mm respectively in diameter, red arrows). (D ②③x50) Dermoscopic examination depicting multiple clustered blood vessel networks, with clearly demarcated red cavities. (E: haematoxylin-eosin x10) Histopathology shows reduced follicular structures, smaller dermal papillae, and a haemangioma protruding above the skin surface as endothelial-lined vascular cavities of varying sizes containing erythrocytes.

We attribute these findings to cherry angiomas induced by topical minoxidil. Given the benign nature of these lesions and their number, no specific treatment was administered; instead, follow-up observation was recommended.

The patient's case is characterized by: (1) the sudden appearance of multiple cherry angiomas during the second year of using 5% minoxidil solution; (2) lesions exclusively confined to the areas of minoxidil application (crown and forehead); and (3) absence of new lesions or growth in the years following the cessation of minoxidil treatment. This phenomenon suggests that the cherry angiomas of our case are associated with topical minoxidil. Instances of cherry angiomas triggered by topical minoxidil are exceedingly rare, with only one other case reported (2). The pathogenesis of cherry angiomas remains elusive; research suggests a correlation between cherry angiomas and certain underlying conditions and adverse environmental exposures (3). This case indicates the angiogenic potential of minoxidil; The exact mechanism of minoxidil action is not yet known, but it is proposed to increase blood flow causing vasodilation and proliferation of blood vessels surrounding hair follicles and leading to an increase in vascular endothelial growth factor (VEGF) levels (4). Minoxidil may be considered an effective vasoactive agent for the stimulation of angiogenesis in rat cutaneous flaps (5, 6). But as our case has found, true angiogenesis visible to the naked eye in patients has so far rarely been reported. More cases and studies need to be identified.

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Written informed consent was obtained from the patient for this case report.

*The authors have no conflicts of interest to declare.*

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